

=> d his ful

(FILE 'HOME' ENTERED AT 12:50:21 ON 04 NOV 2009)

FILE 'HCAPLUS' ENTERED AT 12:50:51 ON 04 NOV 2009

L1 1 SEA SPE=ON ABB=ON PLU=ON US20080226986/PN
 D L1 ALL
 SAV L1 KWA517/A
 SEL L1 RN

FILE 'REGISTRY' ENTERED AT 12:52:01 ON 04 NOV 2009

L2 8 SEA SPE=ON ABB=ON PLU=ON (28408-24-4/BI OR 28408-25-5/
 BI OR 7429-90-5/BI OR 7439-93-2/BI OR 7440-44-0/BI OR
 7782-42-5/BI OR 863184-63-8/BI OR 863184-65-0/BI)
 D SCA
 SAV L2 KWA517A/A

FILE 'LREGISTRY' ENTERED AT 12:56:38 ON 04 NOV 2009

L3 STR
 L4 STR

FILE 'REGISTRY' ENTERED AT 13:03:11 ON 04 NOV 2009

L5 50 SEA SSS SAM L4

FILE 'LREGISTRY' ENTERED AT 13:04:13 ON 04 NOV 2009

L6 STR L4

FILE 'REGISTRY' ENTERED AT 13:25:09 ON 04 NOV 2009

L7 50 SEA SSS SAM L6
 D QUE STAT L7
 D QUE STAT L5

FILE 'LREGISTRY' ENTERED AT 13:27:15 ON 04 NOV 2009

L8 STR L6

FILE 'REGISTRY' ENTERED AT 13:39:33 ON 04 NOV 2009

L9 50 SEA SSS SAM L8
 L10 14238 SEA SSS FUL L8
 L11 4 SEA SPE=ON ABB=ON PLU=ON L10 AND L2
 SAV L10 KWA517C/A

FILE 'LREGISTRY' ENTERED AT 13:42:35 ON 04 NOV 2009

L12 STR L8
 L13 SCR 2040

L14 6 SEA SUB=L10 SSS SAM L12 AND L13
 D SCA

L15 237 SEA SUB=L10 SSS FUL L12 AND L13

L16 FILE 'HCAPLUS' ENTERED AT 13:47:00 ON 04 NOV 2009
 222 SEA SPE=ON ABB=ON PLU=ON L15

L17 FILE 'ZCAPLUS' ENTERED AT 13:47:29 ON 04 NOV 2009
 QUE SPE=ON ABB=ON PLU=ON ?CATHODE?

L18 FILE 'HCAPLUS' ENTERED AT 13:47:43 ON 04 NOV 2009
 3 SEA SPE=ON ABB=ON PLU=ON L16 (L) L17

L19 FILE 'ZCAPLUS' ENTERED AT 13:48:03 ON 04 NOV 2009
 QUE SPE=ON ABB=ON PLU=ON ?NITROXYL?

L20 FILE 'HCAPLUS' ENTERED AT 13:48:20 ON 04 NOV 2009
L21 11 SEA SPE=ON ABB=ON PLU=ON L16 (L) L19
 3 SEA SPE=ON ABB=ON PLU=ON L16 AND L17

L22 FILE 'ZCAPLUS' ENTERED AT 13:49:16 ON 04 NOV 2009
 QUE SPE=ON ABB=ON PLU=ON BATTERY# OR BATTERIES#

L23 FILE 'HCAPLUS' ENTERED AT 13:49:33 ON 04 NOV 2009
L24 3 SEA SPE=ON ABB=ON PLU=ON L16 (L) L22
L25 4 SEA SPE=ON ABB=ON PLU=ON L16 AND L22
 12 SEA SPE=ON ABB=ON PLU=ON L24 OR L23 OR L21 OR L20 OR
 L18

 FILE 'LREGISTRY' ENTERED AT 13:51:44 ON 04 NOV 2009

L26 FILE 'HCAPLUS' ENTERED AT 13:54:17 ON 04 NOV 2009
L27 45 SEA SPE=ON ABB=ON PLU=ON L11
 44 SEA SPE=ON ABB=ON PLU=ON L26 NOT L25

L28 FILE 'ZCAPLUS' ENTERED AT 13:56:02 ON 04 NOV 2009
 QUE SPE=ON ABB=ON PLU=ON ?CARBON? (3A) ?CONDUCT?

L29 FILE 'HCAPLUS' ENTERED AT 13:56:27 ON 04 NOV 2009
L30 0 SEA SPE=ON ABB=ON PLU=ON L16 AND L28
L31 41 SEA SPE=ON ABB=ON PLU=ON L16 AND L19
L32 8 SEA SPE=ON ABB=ON PLU=ON L30 (3A) ?POLYMER?
 8 SEA SPE=ON ABB=ON PLU=ON L31 NOT L25

10/597,517

FILE 'LREGISTRY' ENTERED AT 13:59:33 ON 04 NOV 2009

FILE HOME

FILE HCAPLUS

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FILE COVERS 1907 - 4 Nov 2009 VOL 151 ISS 19

FILE LAST UPDATED: 3 Nov 2009 (20091103/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2009

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

During November, try the new LSUS format of legal status information in the CA/CAPLUS family databases for free! Complete details on the number of free displays and other databases participating in this offer appear in NEWS 10.

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 2 NOV 2009 HIGHEST RN 1190920-68-3

DICTIONARY FILE UPDATES: 2 NOV 2009 HIGHEST RN 1190920-68-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

FILE ZCAPLUS

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FILE COVERS 1907 - 4 Nov 2009 VOL 151 ISS 19

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CAS Information Use Policies apply and are available at:

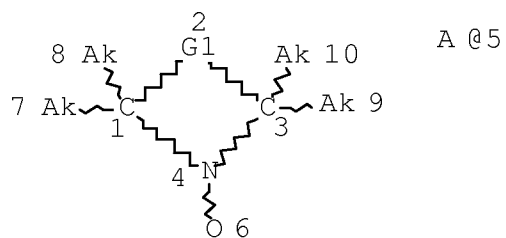
<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

During November, try the new LSUS format of legal status information in the CA/CAPLUS family databases for free! Complete details on the number of free displays and other databases participating in this offer appear in NEWS 10.

10/597,517

=> d que stat l10
L8 STR



REP G1=(2-4) 5
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

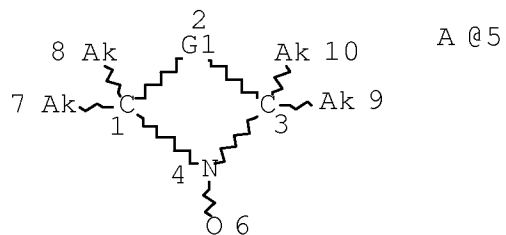
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L10 14238 SEA FILE=REGISTRY SSS FUL L8

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SEARCH TIME: 00.00.17

14238 ANSWERS

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L8 STR



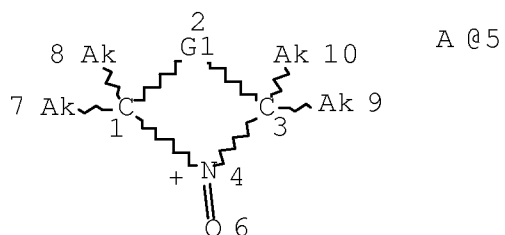
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10/597,517

CONNECT IS E1 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L10 14238 SEA FILE=REGISTRY SSS FUL L8
L12 STR



REP G1=(2-4) 5
NODE ATTRIBUTES:
CHARGE IS *+ AT 4
CONNECT IS E1 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L13 SCR 2040
L15 237 SEA FILE=REGISTRY SUB=L10 SSS FUL L12 AND L13

100.0% PROCESSED 318 ITERATIONS 237 ANSWERS
SEARCH TIME: 00.00.01

=> d l25 1-12 bib abs hitstr hitind
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L25 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2008:81515 HCAPLUS Full-text
DN 148:284662
TI Carbon-carbon bond activation of
2,2,6,6-tetramethyl-piperidine-1-oxyl by a RhII metalloradical: a
combined experimental and theoretical study
AU Chan, Kin Shing; Li, Xin Zhu; Dzik, Wojciech I.; de Bruin, Bas
CS Department of Chemistry, The Chinese University of Hong Kong,
Shatin, New Territories, Hong Kong, Peop. Rep. China
SO Journal of the American Chemical Society (2008), 130(6), 2051-2061
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 148:284662
AB Reaction of the stable radical,
2,2,6,6-tetramethyl-piperidine-1-oxyl with Rh(II) meso-
tetramesitylporphinate proceeds mainly as C-C-bond activation (CCA)
and Me transfer, giving methylrhodium(III) porphinate and 2,2,6-
trimethyl-2,3,4,5-tetrahydropyridine N-oxide. A competitive minor
carbon-hydrogen bond activation (CHA) channel produces 1-hydroxy-
2,2,6,6-tetramethylpiperidine (TEMPOH). The yield of the CCA product
[RhIII(tmp)Me] increased with higher temperature at the cost of the
CHA product TEMPOH in the temperature range 50-80°. Both the CCA and
CHA pathways follow second-order kinetics. The mechanism of the
TEMPO carbon-carbon bond activation was studied by means of kinetic
investigations and DFT calcns. Broken symmetry, unrestricted B3LYP
calcns. along the open-shell singlet surface reveal a low-energy
transition state (TS1) for direct TEMPO Me radical abstraction by the
RhII radical (SH2 type mechanism). An alternative ionic pathway,
with a somewhat higher barrier, was identified along the closed-shell
singlet surface. This ionic pathway proceeds in two sequential
steps: Electron transfer from TEMPO to [RhII(por)] producing the
[TEMPO]+[RhI(por)]- cation-anion pair, followed by net CH3+ transfer
from TEMPO+ to RhI with formation of [RhIII(por)Me] and (DMPO-like)
2,2,6-trimethyl-2,3,4,5-tetrahydro-1-pyridiniumolate. The transition
state for this process (TS2) is best described as an SN2-like
nucleophilic substitution involving attack of the dz2 orbital of
[RhI(por)]- at one of the CMe-Cring σ^* orbitals of [TEMPO]+.
Although the calculated barrier of the open-shell radical pathway is
somewhat lower than the barrier for the ionic pathway, R-DFT and U-
DFT are not likely comparatively accurate enough to reliably
distinguish between these possible pathways. Both the radical (SH2)
and the ionic (SN2) pathway have barriers which are low enough to
explain the exptl. kinetic data.
IT 1007605-39-1

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)

(kinetics and potential energy surface for Me and hydride transfer reactions of TEMPO nitroxyl radical and rhodium porphinato complexes)

RN 1007605-39-1 HCAPLUS

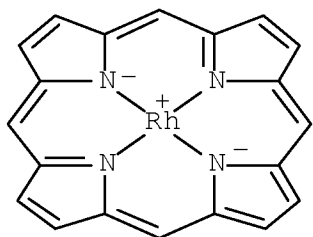
CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo-,
(SP-4-1)-[21H,23H-porphinato(2-)-
ⓀN21,ⓀN22,ⓀN23,ⓀN24]rhodate(1-) (1:1) (CA
INDEX NAME)

CM 1

CRN 1007605-38-0

CMF C20 H12 N4 Rh

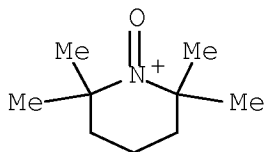
CCI CCS



CM 2

CRN 45842-10-2

CMF C9 H18 N O



CC 22-4 (Physical Organic Chemistry)
 Section cross-reference(s): 26, 29, 78

IT 956578-75-9, Rhodium porphinate 1007605-36-8 1007605-37-9
 1007605-39-1
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
 (kinetics and potential energy surface for Me and hydride transfer reactions of TEMPO nitroxyl radical and rhodium porphinato complexes)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:1009278 HCAPLUS Full-text

DN 148:466171

TI Radical-scavenging activity of nitroxyl radical as an electron donor

AU Manda, S.; Kawaguchi, K.; Ohkubo, K.; Kawashima, T.; Kanazawa, H.; Takeshita, K.; Anzai, K.; Ozawa, T.; Fukuzumi, S.; Ikota, N.; Nakanishi, I.

CS Heavy-Ion Radiobiology Research Group, Research Center for Charged Particle Therapy, National Institute of Radiological Sciences, Inage-ku, Chiba, 263-8555, Japan

SO Proceedings of the Congress of the Society for Free Radical Research International, 13th, Davos, Switzerland, Aug. 15-19, 2006 (2006), 237-239 Publisher: Monduzzi Editore, Bologna, Italy.
 CODEN: 69JTC5; ISBN: 88-7587-274-0

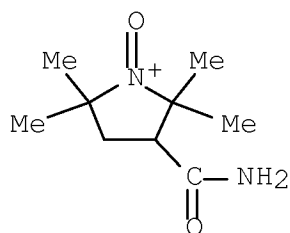
DT Conference

LA English

AB Cumylperoxyl radical (PhCMe200•), generated under irradiation of a propionitrile solution of cumene, di-tert-Bu peroxide, and O2 at 193 K, was efficiently scavenged by 3-carbamoyl-2,2,5,5-tetramethylpyrrolidine- N-oxyl (CP), a frequently used spin probe for in vivo ESR measurements. The scavenging rate is found to be accelerated in the presence of Sc(OSO2CF3)3, indicating that CP scavenges PhCMe200• via an electron transfer from CP to PhCMe200• rather than via a radical-coupling reaction. The coordination of Sc3+ to PhCMe200- thus produced decreases the free energy change of the electron transfer, resulting in the acceleration of the scavenging reaction.

IT 46147-12-0
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (radical-scavenging activity of nitroxyl radical as an electron donor)

RN 46147-12-0 HCAPLUS
 CN Pyrrolidinium, 3-(aminocarbonyl)-2,2,5,5-tetramethyl-1-oxo- (CA
 INDEX NAME)



CC 9-5 (Biochemical Methods)
 Section cross-reference(s): 6, 8
 IT 4399-80-8 7175-54-4 46147-12-0
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (radical-scavenging activity of nitroxyl radical as an
 electron donor)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 2007:701897 HCAPLUS Full-text
 DN 147:98690
 TI Separator-less thin power storage devices with high performance
 IN Morioka, Yukiko; Suguro, Masahiro; Iriyama, Jiro; Iwasa, Shigeyuki
 PA Nec Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 25pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007165054	A	20070628	JP 2005-357932	20051212
PRAI	JP 2005-357932		20051212		

AB The title device has a ~~cathode~~ containing a nitroxyl macromol. which shows cationic nitroxyl moiety =N+=O (I) in oxidation state and radical nitroxyl moiety +N-O· (II) in reduction state for donating and accepting electrons between I and II in ~~cathode~~ reaction, an

anode containing a Li or Li alloy active mass, and a **cathode** current collector composed of a metal sheet and a conductivity-improving layer containing materials with hole-transporting group and electron-transporting group. The **cathode** is directly in contact with the anode. The device has high capacity in high c.d. and high output.

IT 942407-93-4

RL: TEM (Technical or engineered material use); USES (Uses)
 (**cathode** material; separator-less thin power storage devices having **cathode** containing **nitroxyl** macromol. and anode containing Li or Li alloy)

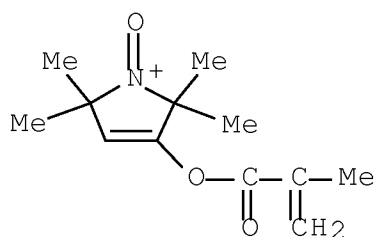
RN 942407-93-4 HCAPLUS

CN 1H-Pyrrolium, 2,5-dihydro-2,2,5,5-tetramethyl-3-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-1-oxo-, homopolymer (CA INDEX NAME)

CM 1

CRN 942407-92-3

CMF C12 H18 N O3



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST separatorless thin power storage device **nitroxyl** macromol

cathode; battery **nitroxyl** macromol **cathode**

lithium anode

IT **Battery** anodes

Battery cathodes

Secondary **batteries**

(separator-less thin power storage devices having **cathode** containing **nitroxyl** macromol. and anode containing Li or Li alloy)

IT 7439-93-2, Lithium, uses 53680-59-4 68848-64-6

RL: TEM (Technical or engineered material use); USES (Uses)
 (anode active mass; separator-less thin power storage devices having **cathode** containing **nitroxyl** macromol. and anode containing Li or Li alloy)

IT 28408-25-5 942407-93-4

RL: TEM (Technical or engineered material use); USES (Uses)

(**cathode** material; separator-less thin power storage devices having **cathode** containing nitroxyl macromol. and anode containing Li or Li alloy)

IT 7429-90-5, Aluminum, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (current collector substrate; separator-less thin power storage devices having **cathode** containing nitroxyl macromol. and anode containing Li or Li alloy)

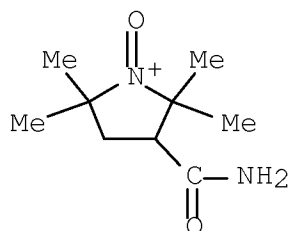
IT 15082-28-7 163226-12-8
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron-transporting material; separator-less thin power storage devices having **cathode** containing nitroxyl macromol. and anode containing Li or Li alloy)

IT 123847-85-8 942407-94-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (hole-transporting material; separator-less thin power storage devices having **cathode** containing nitroxyl macromol. and anode containing Li or Li alloy)

L25 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 2007:340260 HCAPLUS Full-text
 DN 146:521349
 TI Scandium ion-accelerated scavenging reaction of cumylperoxyl radical by a cyclic nitroxyl radical via electron transfer
 AU Nakanishi, Ikuo; Kawaguchi, Kumiko; Ohkubo, Kei; Kawashima, Tomonori; Manda, Sushma; Kanazawa, Hideko; Takeshita, Keizo; Anzai, Kazunori; Ozawa, Toshihiko; Fukuzumi, Shunichi; Ikota, Nobuo
 CS Redox Regulation Research Group, Research Center for Radiation Safety, National Institute of Radiological Sciences (NIRS), Inage-ku, Chiba, 263-8555, Japan
 SO Chemistry Letters (2007), 36(3), 378-379
 CODEN: CMLTAG; ISSN: 0366-7022
 PB Chemical Society of Japan
 DT Journal
 LA English
 AB A cyclic nitroxyl radical used as a spin probe efficiently scavenges cumylperoxyl radical in an aprotic medium via an electron-transfer process, which is significantly accelerated by the presence of scandium ion.

IT 46147-12-0
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (scandium ion-accelerated scavenging reaction of cumylperoxyl radical by cyclic **nitroxyl** radical via electron transfer)

RN 46147-12-0 HCAPLUS
 CN Pyrrolidinium, 3-(aminocarbonyl)-2,2,5,5-tetramethyl-1-oxo- (CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 72, 74, 77

IT 46147-12-0

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(scandium ion-accelerated scavenging reaction of cumylperoxyl radical by cyclic **nitroxyl** radical via electron transfer)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2006:1092057 HCAPLUS Full-text

DN 146:29957

TI The use of 2,2,6,6-tetramethylpiperinyl-oxides and derivatives for redox shuttle additives in Li-ion cells

AU Buhrmester, Claudia; Moshurchak, L. M.; Wang, R. L.; Dahn, J. R.

CS Department of Physics and Atmospheric Science, Dalhousie University, Halifax, NS, B3H 3J5, Can.

SO Journal of the Electrochemical Society (2006), 153(10), A1800-A1804
CODEN: JESOAN; ISSN: 0013-4651

PB Electrochemical Society

DT Journal

LA English

AB The stable radical, 2,2,6,6-tetramethylpiperinyl oxide (TEMPO), is a stable redox shuttle in Li₄/3Ti₅/304/LiFePO₄ Li-ion coin cells providing over 120 cycles of shuttle-protected overcharge. Derivs. of TEMPO, such as 4-methoxy-TEMPO and 4-cyano-TEMPO are also stable. Relatives of TEMPO, having a 5-membered ring, such as 3-cyano-2,2,5,5-tetramethyl-1-pyrrolidinyl-oxyl (3-cyano-PROXYL) show similar stability. One disadvantage of these mols. is their relatively low oxidation potentials, which are too close to that of LiFePO₄ for com. applications. Ab initio calcns. show that the redox potential of

these mols. can be tailored by substitutions of F for the H atoms in the Me groups.

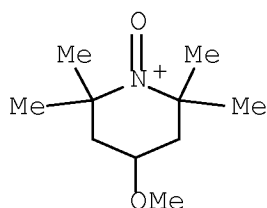
IT 135023-08-4

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(methylnpiperinyl oxides and derivs. as redox shuttle additives for Li-ion batteries)

RN 135023-08-4 HCAPLUS

CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-1-oxo- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72

ST tetramethylpiperinyl oxide deriv redox shuttle additive lithium ion battery

IT Secondary batteries

(lithium; methylnpiperinyl oxides and derivs. as redox shuttle additives for Li-ion batteries)

IT 21324-40-3, Lithium hexafluorophosphate (LiPF₆) 244761-29-3,
Lithium bis(oxalato)borate

RL: TEM (Technical or engineered material use); USES (Uses)

(electrolyte; methylnpiperinyl oxides and derivs. as redox shuttle additives for Li-ion batteries with)

IT 2564-83-2, Tempo 2896-70-0, 4-Oxo-TEMPO 3225-26-1 35203-66-8

37149-18-1 38078-71-6 135023-08-4 299895-12-8

913815-78-8 913815-79-9 913815-81-3 913815-83-5

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(methylnpiperinyl oxides and derivs. as redox shuttle additives for Li-ion batteries)

OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2006:981494 HCAPLUS Full-text

DN 145:339158
 TI Secondary lithium ion **battery** containing nitroxyl radical
 compound in electrolytic solution for overcharging resistance
 IN Nakahara, Kentaro; Matsuu, Masaaki
 PA Nec Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 29pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2006252917	A	20060921	JP 2005-67186	20050310

PRAI JP 2005-67186 20050310

AB The disclosed **battery** contains a nitroxyl radical compound in the electrolytic solution and an active mass compound having redox potential lower than the radical compound in the **cathode**. Increase of voltage in the **battery** is suppressed even under long-term overcharging.

IT 863309-36-8 909534-31-2

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(lithium ion **battery** containing **nitroxyl** radical compound in electrolytic solution and **cathode** active mass with low redox potential for overcharging resistance)

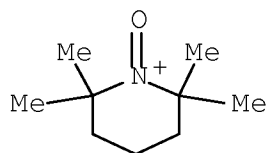
RN 863309-36-8 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-, 1-oxide hexafluorophosphate(1-)
 (1:1) (CA INDEX NAME)

CM 1

CRN 45842-10-2

CMF C9 H18 N O



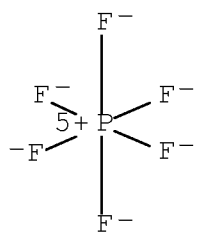
10/597,517

CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



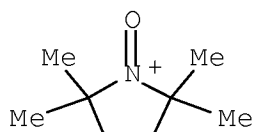
RN 909534-31-2 HCAPLUS

CN Pyrrolidinium, 2,2,5,5-tetramethyl-1-oxo-, tetrafluoroborate(1-)
(9CI) (CA INDEX NAME)

CM 1

CRN 863309-37-9

CMF C8 H16 N O

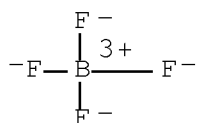


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **cathode** active mass nitroxyl radical electrolytic soln
lithium **battery**; overcharging resistance lithium ion
battery nitroxyl radical electrolytic soln
- IT **Battery cathodes**
Electrolytic solutions
(lithium ion **battery** containing nitroxyl radical compound in
electrolytic solution and **cathode** active mass with low
redox potential for overcharging resistance)
- IT Radicals, uses
RL: DEV (Device component use); USES (Uses)
(lithium ion **battery** containing nitroxyl radical compound in
electrolytic solution and **cathode** active mass with low
redox potential for overcharging resistance)
- IT 12031-92-4, Lithium manganese oxide (LiMnO₂) 12162-79-7,
Lithium manganese oxide (LiMnO₂) 15365-14-7, Iron lithium
phosphate (FeLiPO₄)
RL: DEV (Device component use); USES (Uses)
(**cathode** active mass; lithium ion **battery**
containing nitroxyl radical compound in electrolytic solution and
cathode active mass with low redox potential for
overcharging resistance)
- IT 2406-25-9 2564-83-2 3229-53-6 27720-81-6 34549-03-6
38582-73-9 863309-36-8 909534-31-2
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(lithium ion **battery** containing nitroxyl radical
compound in electrolytic solution and **cathode** active mass
with low redox potential for overcharging resistance)
- L25 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
- AN 2005:902407 HCAPLUS Full-text
- DN 143:250986
- TI Secondary **batteries** using nitroxyl compound
cathode active mass and good charge-discharge cycle
performance
- IN Nakahara, Kentaro; Iriyama, Jiro; Iwasa, Shigeyuki; Suguro,
Masahiro; Sato, Masaharu
- PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2005228712	A	20050825	JP 2004-38802	20040216

PRAI JP 2004-38802 20040216

OS MARPAT 143:250986

AB The devices have nitroxyl compound **cathode** active mass where electrons are exchanged between oxidized state $N^+:O$ and reduced state $NO\cdot$, and Li or Li alloy anode active mass, where a part of the nitroxyl compds. are dissolved in electrolytic solns. Thus, a button-type secondary Li **batteries** having a **cathode** containing carbon paper impregnated with an electrolytic solution containing 2,2,6,6-tetramethyl-1-oxopiperidinium hexafluorophosphate, a Li anode, and porous polyethylene separator impregnated with the electrolytic solution is exemplified.

IT 31198-93-3P 33247-78-8P 863309-36-8P
863309-38-0P 863309-40-4P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(secondary **batteries** using nitroxyl compound **cathode** active mass partly dissolved in electrolytic solns., and Li or Li alloy anode active mass)

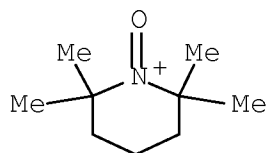
RN 31198-93-3 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-, 1-oxide perchlorate (1:1) (CA INDEX NAME)

CM 1

CRN 45842-10-2

CMF C9 H18 N O

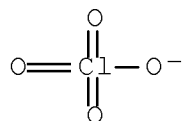


10/597,517

CM 2

CRN 14797-73-0

CMF Cl O4



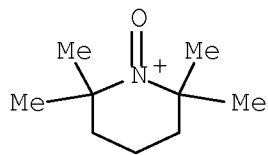
RN 33247-78-8 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo-, tetrafluoroborate(1-)
(1:1) (CA INDEX NAME)

CM 1

CRN 45842-10-2

CMF C9 H18 N O



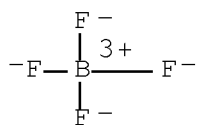
CM 2

CRN 14874-70-5

CMF B F4

CCI CCS

10/597,517



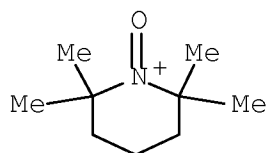
RN 863309-36-8 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-, 1-oxide hexafluorophosphate(1-)
(1:1) (CA INDEX NAME)

CM 1

CRN 45842-10-2

CMF C9 H18 N O

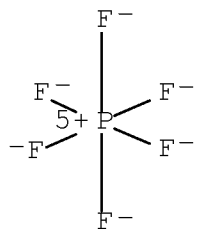


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 863309-38-0 HCAPLUS

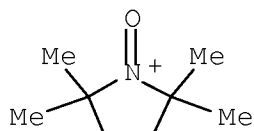
10/597,517

CN Pyrrolidinium, 2,2,5,5-tetramethyl-1-oxo-, hexafluorophosphate(1-)
(9CI) (CA INDEX NAME)

CM 1

CRN 863309-37-9

CMF C8 H16 N O

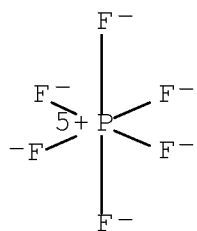


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



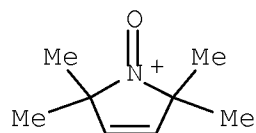
RN 863309-40-4 HCAPLUS

CN 1H-Pyrrolium, 2,5-dihydro-2,2,5,5-tetramethyl-1-oxo-,
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 863309-39-1

CMF C8 H14 N O

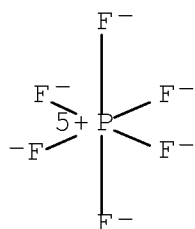


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



- IC ICM H01M010-40
ICS H01M004-02; H01M004-38; H01M004-60; H01M004-66
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27
- ST lithium **battery cathode** nitroxyl compd;
tetramethyloxopiperidinium fluorophosphate **cathode** button
lithium **battery**
- IT Secondary **batteries**
(button-type; secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
solns., and Li or Li alloy anode active mass)
- IT Copying paper
(carbon paper, **cathode** current collector; secondary
batteries using nitroxyl compound **cathode** active
mass partly dissolved in electrolytic solns., and Li or Li alloy
anode active mass)
- IT Secondary **batteries**
(lithium; secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
solns., and Li or Li alloy anode active mass)

IT **Battery anodes**
Battery cathodes
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

IT Lithium alloy, base
 RL: DEV (Device component use); USES (Uses)
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

IT 7429-90-5, Aluminum, uses
 RL: DEV (Device component use); USES (Uses)
 (**cathode**; secondary **batteries** using nitroxyl
 compound **cathode** active mass partly dissolved in
 electrolytic solns., and Li or Li alloy anode active mass)

IT 7439-93-2, Lithium, uses 53680-59-4 95535-75-4, Lithium silicide
 RL: DEV (Device component use); USES (Uses)
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

IT 31198-93-3P 33247-78-8P 863309-36-8P
 863309-38-0P 863309-40-4P
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

IT 2564-83-2, 2,2,6,6-Tetramethylpiperidinyloxy
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or
 reagent); USES (Uses)
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

IT 3229-53-6, 2,2,5,5-Tetramethylpyrrolidinyloxy 27720-81-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (secondary **batteries** using nitroxyl compound
cathode active mass partly dissolved in electrolytic
 solns., and Li or Li alloy anode active mass)

L25 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 2004:937 HCAPLUS Full-text
 DN 140:217194
 TI Reaction of Nitrosonium Tetrafluoroborate with Nitroxyl Radicals
 AU Borodkin, G. I.; Elanov, I. R.; Shakirov, M. M.; Shubin, V. G.
 CS Siberian Division, Vorozhtsov Novosibirsk Institute of Organic
 Chemistry, Russian Academy of Sciences, Novosibirsk, 630090, Russia
 SO Russian Journal of Organic Chemistry (Translation of Zhurnal

Organicheskoi Khimii) (2003), 39(8), 1144-1150

CODEN: RJOCEQ; ISSN: 1070-4280

PB MAIK Nauka/Interperiodica Publishing

DT Journal

LA English

AB It was established by means of multinuclear magnetic resonance method (^1H , ^{13}C , ^{19}F and ^{14}N) that reaction of 2,2,6,6-tetramethyl-4-R-piperidin-1-oxyl radicals ($\text{R} = \text{H}$, OH , OMe , OCOPh , NHCOMe) with nitrosonium tetrafluoroborate gave rise to the corresponding 2,2,6,6-tetramethyl-1-oxo-4-R-piperidinium tetrafluoroborates. Linear correlations were found between the chemical shifts of atoms H_4 , C_4 of cations and resp. σ_1 -consts. of substituents R and chemical shifts of C_4 atom calculated from increments of substitution. The conformational features of the generated nitrosonium cations are considered on the grounds of vicinal coupling consts. J_{HH} and quantum-chemical calcns. by AM1 method.

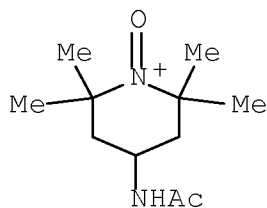
IT 136708-39-9 666179-58-4

RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)

(NMR and ab initio on reaction of nitrosonium tetrafluoroborate with nitroxyl radicals)

RN 136708-39-9 HCAPLUS

CN Piperidinium, 4-(acetylamino)-2,2,6,6-tetramethyl-1-oxo- (CA INDEX NAME)



RN 666179-58-4 HCAPLUS

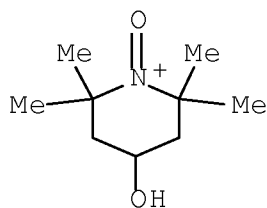
CN Piperidinium, 4-hydroxy-2,2,6,6-tetramethyl-1-oxo-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 45985-24-8

CMF C9 H18 N O2

10/597,517

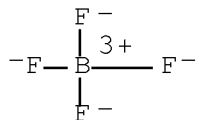


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IT 33247-78-8 33247-81-3 45985-26-0
135023-09-5 219543-09-6 666179-59-5

RL: FMU (Formation, unclassified); PRP (Properties); FORM
(Formation, nonpreparative)

(NMR and ab initio on reaction of nitrosonium tetrafluoroborate
with nitroxyl radicals)

RN 33247-78-8 HCAPLUS

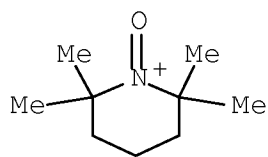
CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo-, tetrafluoroborate(1-)
(1:1) (CA INDEX NAME)

CM 1

CRN 45842-10-2

CMF C9 H18 N O

10/597,517

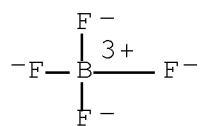


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



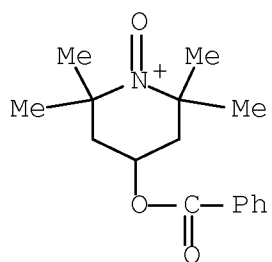
RN 33247-81-3 HCAPLUS

CN Piperidinium, 4-(benzoyloxy)-2,2,6,6-tetramethyl-1-oxo-,
tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 47089-86-1

CMF C16 H22 N O3



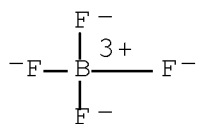
10/597,517

CM 2

CRN 14874-70-5

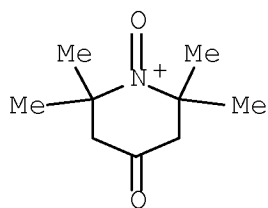
CMF B F4

CCI CCS



RN 45985-26-0 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1,4-dioxo- (9CI) (CA INDEX NAME)



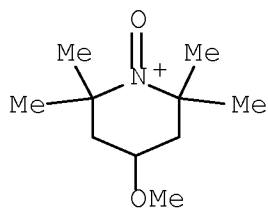
RN 135023-09-5 HCAPLUS

CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-1-oxo-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 135023-08-4

CMF C10 H20 N O2



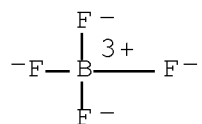
10/597,517

CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



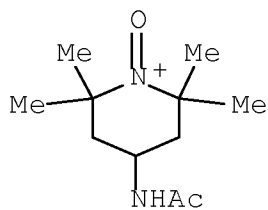
RN 219543-09-6 HCAPLUS

CN Piperidinium, 4-(acetylamino)-2,2,6,6-tetramethyl-1-oxo-,
tetrafluoroborate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 136708-39-9

CMF C11 H21 N2 O2

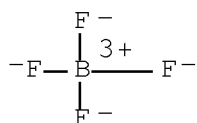


CM 2

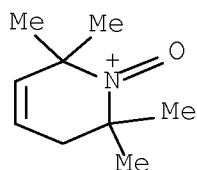
CRN 14874-70-5

CMF B F4

CCI CCS



RN 666179-59-5 HCAPLUS
 CN Pyridinium, 1,2,3,6-tetrahydro-2,2,6,6-tetramethyl-1-oxo- (9CI) (CA
 INDEX NAME)



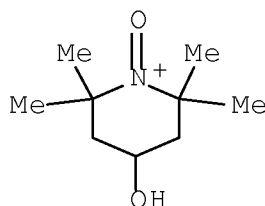
CC 22-7 (Physical Organic Chemistry)
 Section cross-reference(s): 27, 77
 IT 136708-39-9 666179-58-4
 RL: CPS (Chemical process); FMU (Formation, unclassified); PEP
 (Physical, engineering or chemical process); PRP (Properties); RCT
 (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT
 (Reactant or reagent)
 (NMR and ab initio on reaction of nitrosonium tetrafluoroborate
 with nitroxyl radicals)
 IT 33247-78-8 33247-81-3 45985-26-0
 135023-09-5 219543-09-6 666179-59-5
 RL: FMU (Formation, unclassified); PRP (Properties); FORM
 (Formation, nonpreparative)
 (NMR and ab initio on reaction of nitrosonium tetrafluoroborate
 with nitroxyl radicals)
 OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2
 CITINGS)
 RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L25 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 2001:613303 HCAPLUS Full-text
 DN 135:344169
 TI Interaction of chlorine dioxide with nitroxyl radicals
 AU Ganiev, I. M.; Timergazin, K. K.; Shereshovets, V. V.; Grigor'ev, I.

A.; Tolstikov, G. A.
 CS Institute of Organic Chemistry, Ufa Research Center of the Russian Academy of Sciences, Ufa, 450054, Russia
 SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2001), 50(4), 614-619
 CODEN: RCBUEY; ISSN: 1066-5285
 PB Kluwer Academic/Consultants Bureau
 DT Journal
 LA English
 AB The formation of charge transfer complexes between chlorine dioxide and nitroxyl radicals [2,2,6,6-tetramethylpiperidin-1-oxyl, 4-hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl, 4-oxo-2,2,6,6-tetramethylpiperidin-1-oxyl, 4-methoxy-2,2,6,6-tetramethylpiperidin-1-oxyl, 4-acetylamido-2,2,6,6-tetramethylpiperidin-1-oxyl, 2,2,5,5-tetramethyl-4-phenyl-3-imidazolin-1-oxyl, and bis(4-methoxyphenyl) nitroxide] in acetone, acetonitrile, n-heptane, di-Et ether, carbon tetrachloride, toluene, and dichloromethane was found by spectrophotometry at -60 to +20°C. The thermodyn. parameters of complex formation were determined. The radical structure affects its complex formation ability. The charge transfer complex is transformed into the corresponding oxoammonium salt.
 IT 233280-37-0P 328557-80-8P
 371156-05-7P 371156-06-8P 371156-08-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (charge-transfer complexation of chlorine dioxide with
 nitroxyl radicals and their further transformation to
 oxoammonium chlorites)
 RN 233280-37-0 HCAPLUS
 CN Piperidinium, 4-hydroxy-2,2,6,6-tetramethyl-1-oxo-, chlorite (salt)
 (9CI) (CA INDEX NAME)

CM 1

CRN 45985-24-8

CMF C9 H18 N O2

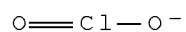


10/597,517

CM 2

CRN 14998-27-7

CMF Cl O2



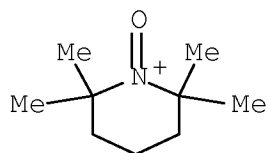
RN 328557-80-8 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo-, chlorite (CA INDEX NAME)

CM 1

CRN 45842-10-2

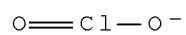
CMF C9 H18 N O



CM 2

CRN 14998-27-7

CMF Cl O2



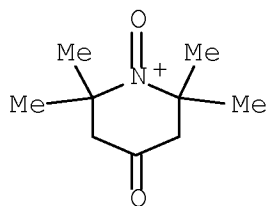
RN 371156-05-7 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1,4-dioxo-, chlorite (9CI) (CA INDEX NAME)

CM 1

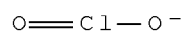
10/597,517

CRN 45985-26-0
CMF C9 H16 N O2



CM 2

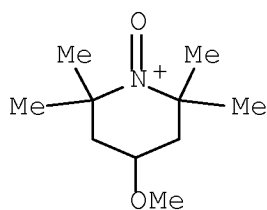
CRN 14998-27-7
CMF C1 O2



RN 371156-06-8 HCAPLUS
CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-1-oxo-, chlorite (9CI)
(CA INDEX NAME)

CM 1

CRN 135023-08-4
CMF C10 H20 N O2

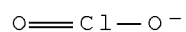


10/597,517

CM 2

CRN 14998-27-7

CMF Cl O2



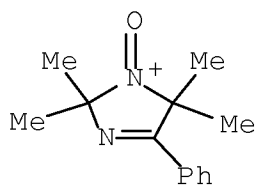
RN 371156-08-0 HCAPLUS

CN 1H-Imidazolium, 2,5-dihydro-2,2,5,5-tetramethyl-1-oxo-4-phenyl-,
chlorite (9CI) (CA INDEX NAME)

CM 1

CRN 371156-07-9

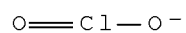
CMF C13 H17 N2 O



CM 2

CRN 14998-27-7

CMF Cl O2



CC 22-12 (Physical Organic Chemistry)

IT 233280-37-0P 328557-80-8P

371156-05-7P 371156-06-8P 371156-08-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(charge-transfer complexation of chlorine dioxide with
nitroxyl radicals and their further transformation to
oxoammonium chlorites)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2
CITINGS)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 2001:167234 HCAPLUS Full-text

DN 135:52639

TI Selective electrocatalytic oxidation of N-alkyl-N-methylanilines to
N-alkylformanilides using nitroxyl radical

AU Kashiwagi, Yoshitomo; Anzai, Jun-Ichi

CS Graduate School of Pharmaceutical Sciences, Tohoku University,
Sendai, 980-8578, Japan

SO Chemical & Pharmaceutical Bulletin (2001), 49(3), 324-326
CODEN: CPBTAL; ISSN: 0009-2363

PB Pharmaceutical Society of Japan

DT Journal

LA English

AB Electrocatalytic oxidation of N-alkyl-N-methylanilines was studied
using 4-benzoyloxy-2,2,6,6-tetramethylpiperidiny-N-oxyl as a
nitroxyl radical. The reaction with N-alkyl-N-methylanilines led to
direct formation of N-alkylformanilides in the presence of H₂O in
reaction media in adequate conversion (>75.8%), high current
efficiency (>89.2%) and high selectivity (>93.8%).

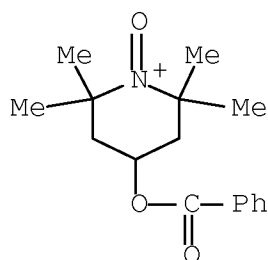
IT 47089-86-1

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation,
nonpreparative); RACT (Reactant or reagent)

(electrochem. oxidative formation in selective electrocatalytic
oxidation of N-alkylmethylanilines to N-alkylformanilides using
nitroxyl radical)

RN 47089-86-1 HCAPLUS

CN Piperidinium, 4-(benzoyloxy)-2,2,6,6-tetramethyl-1-oxo- (9CI) (CA
INDEX NAME)



CC 72-2 (Electrochemistry)
 Section cross-reference(s): 22, 25

IT 47089-86-1
 RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
 (electrochem. oxidative formation in selective electrocatalytic oxidation of N-alkylmethylanilines to N-alkylformanilides using nitroxyl radical)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1999:380262 HCAPLUS Full-text

DN 131:115978

TI Complexes of chlorine dioxide with nitroxyl radicals

AU Ganiev, Ilgiz M.; Timerghazin, Qadir K.; Khalizov, Alexey F.; Andriyashina, Nadezhda M.; Shereshovets, Valerii V.; Volodarsky, Leonid B.; Tolstikov, Genrikh A.

CS Institute of Organic Chemistry, Ufa Research Centre of Russian Academy of Sciences, Ufa, Russia

SO Tetrahedron Letters (1999), 40(25), 4737-4740
 CODEN: TELEAY; ISSN: 0040-4039

PB Elsevier Science Ltd.

DT Journal

LA English

AB Chlorine dioxide forms red-colored ($\lambda_{\text{max}}=480$ nm) CT complexes with persistent piperidine and imidazoline nitroxyl radicals in di-Et ether, n-pentane, carbon tetrachloride, methylene chloride and on silica gel surface. Equilibrium consts., enthalpy and entropy of formation and extinction coefficient of the complex between ClO₂ and 2,2,6,6-tetramethyl-4-hydroxypiperidin-1-oxyl in di-Et ether were determined In Et₂O the complex is stable under normal conditions, in other media it transforms into the oxoammonium salt.

10/597,517

IT 233280-37-0

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(CT complexes of chlorine dioxide with **nitroxyl** radicals as intermediates in their conversion to oxoammonium salts)

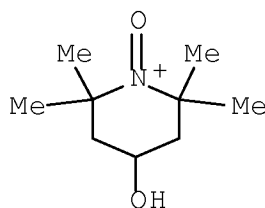
RN 233280-37-0 HCAPLUS

CN Piperidinium, 4-hydroxy-2,2,6,6-tetramethyl-1-oxo-, chlorite (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 45985-24-8

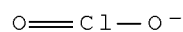
CMF C9 H18 N O2



CM 2

CRN 14998-27-7

CMF Cl O2



CC 22-12 (Physical Organic Chemistry)

IT 233280-37-0

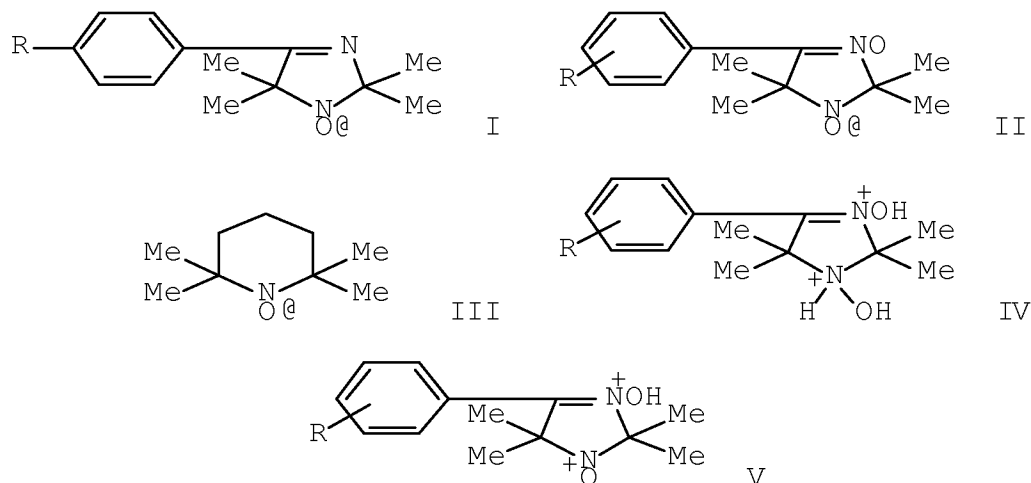
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(CT complexes of chlorine dioxide with **nitroxyl** radicals as intermediates in their conversion to oxoammonium salts)

OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 1987:597363 HCAPLUS Full-text
DN 107:197363
OREF 107:31643a,31646a
TI Study of reactions of nitroxyl radicals in strong acids and
superacids by EPR and proton and carbon-13 NMR
AU Grigor'ev, I. A.; Shchukin, G. I.; Volodarskii, L. B.
CS Inst. Org. Khim., Novosibirsk, USSR
SO Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1986), (10),
2277-83
CODEN: IASKA6; ISSN: 0002-3353
DT Journal
LA Russian
GI



AB Protonation of nitroxides I (R = H, F), II (R = H, 4-Me, 4-F, 4-NO₂, 2-NO₂, etc.), and III in strong acids or superacids gave dication, e.g., IV and V. Smaller concns. of cation radicals were also detected.

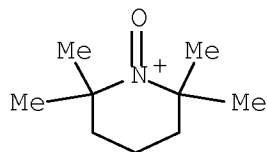
IT 45842-10-2P 95883-71-9P 95883-74-2P
95883-75-3P 110880-82-5P 110880-83-6P
110880-84-7P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, from nitroxyl radicals in acids)

10/597,517

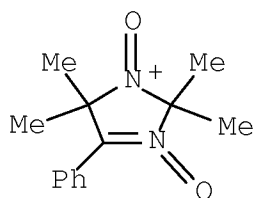
RN 45842-10-2 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo- (CA INDEX NAME)



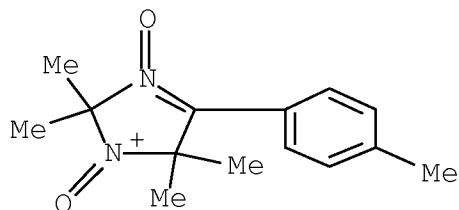
RN 95883-71-9 HCAPLUS

CN 1H-Imidazolium, 2,5-dihydro-2,2,5,5-tetramethyl-4-phenyl-, conjugate acid (1:1) (CA INDEX NAME)



RN 95883-74-2 HCAPLUS

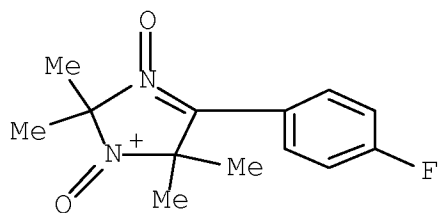
CN 1H-Imidazolium, 2,5-dihydro-2,2,5,5-tetramethyl-4-(4-methylphenyl)-, conjugate acid (1:1) (CA INDEX NAME)



10/597,517

RN 95883-75-3 HCAPLUS

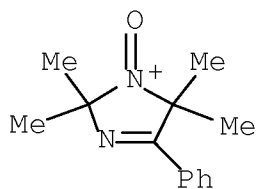
CN 1H-Imidazolium, 4-(4-fluorophenyl)-2,5-dihydro-2,2,5,5-tetramethyl-,
conjugate acid (1:1) (CA INDEX NAME)



● H⁺

RN 110880-82-5 HCAPLUS

CN 1H-Imidazolium, 2,5-dihydro-2,2,5,5-tetramethyl-4-phenyl-, conjugate
acid (1:1) (CA INDEX NAME)

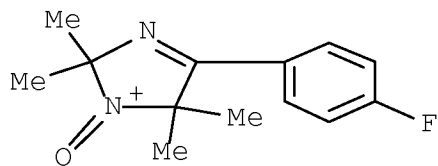


● H⁺

RN 110880-83-6 HCAPLUS

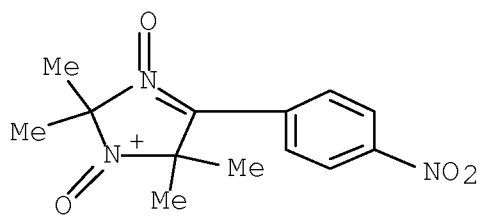
CN 1H-Imidazolium, 4-(4-fluorophenyl)-2,5-dihydro-2,2,5,5-tetramethyl-,
conjugate acid (1:1) (CA INDEX NAME)

10/597,517



RN 110880-84-7 HCAPLUS

CN 1H-Imidazolium, 2,5-dihydro-2,2,5,5-tetramethyl-4-(4-nitrophenyl)-,
conjugate acid (1:1) (CA INDEX NAME)



CC 22-10 (Physical Organic Chemistry)

IT 45842-10-2P 95883-70-8P 95883-71-9P
95883-72-0P 95883-73-1P 95883-74-2P
95883-75-3P 110880-79-0P 110880-81-4P
110880-82-5P 110880-83-6P 110880-84-7P
110880-85-8P 110906-60-0P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, from nitroxyl radicals in acids)

=> d 132 1-8 bib abs hitstr hitind

YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L32 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2008:309637 HCAPLUS Full-text
DN 150:261964
TI Spectral Properties of Probes Containing Benzothioxanthene
Chromophore Linked with Hindered Amine in Solution and in
Polymer Matrices
AU Hrdlovic, Pavol; Chmela, Stefan; Danko, Martin; Sarakha, Mohamed;
Guyot, Ghislain
CS Polymer Institute, Slovak Academy of Sciences, Bratislava, 842 36,
Slovakia
SO Journal of Fluorescence (2008), 18(2), 393-402
CODEN: JOFLEN; ISSN: 1053-0509
PB Springer
DT Journal
LA English
OS CASREACT 150:261964
AB Absorption and emission spectroscopy as well as laser flash
photolysis was employed in order to characterize the spectral
properties of novel probes based on benzothioxantheneimide
chromophore covalently linked with different types of sterically
hindered amines. These were chosen as 2-(2,2,6,6-tetramethyl-4-
piperidyl)-thioxantheno[2,1,9-dej]isoquinoline-1,3-dione (BTXINH),
the equivalent stable **nitroxyl** radical, i.e.
2-(1-oxo-2,2,6,6-tetramethyl-4-
piperidyl)thioxantheno[2,1,9-dej]isoquinoline 1,3-dione (BTXINO) and
the alkoxy derivative 2-(1-(1'-phenylethoxy)-2,2,6,6-tetramethyl-4-
piperidyl)-thioxantheno[2,1,9-dej]isoquinoline-1,3-dione (BTXINOR).
Spectral properties, in solns. and in various **polymer** matrixes such
as polystyrene, polymethyl methacrylate, polyvinyl chloride and
polypropylene, were compared with the compound 2-(1-dodecyl)-
thioxantheno[2,1,9-dej]isoquinoline-1,3-dione (BTXID) taken in the
present study as a reference compound. By means of the fluorescence
decay and in the contrary to three other probes, BTXINO probe clearly
showed a bi-exponential decay while the three other probes led to
monoexponential decay. Two different singlet excited states with
lifetimes of about 0.4 and 5 ns were proposed. They correspond to
two dispositions of the **nitroxyl** radical chain above and along the
fluorescent moiety of the mol. Such behavior depends on the
surrounding media. Moreover, an efficient intramol. quenching of the
fluorescence emission was only observed with the short lived singlet
excited state. The ratio BTXID/BTXINO was found equal to about 4 and
9 in solns. and **polymer** matrixes resp. Laser flash photolysis
indicated that the novel probes as well as the model compound yielded
transient absorption with maximum at 530 nm, corresponding to the
triplet states. The intermol. quenching of such species by mol.
oxygen and by free N-oxyl, such as 1-oxy-2,2,6,6-teramethylpiperidine

(TEMPO) and 1-oxy-2,2,6,6-tetramethyl-4-hydroxypiperidine (TEMPOL), and the intramol. quenching was not efficient.

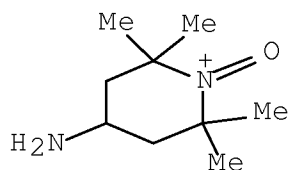
IT 192767-74-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

RN 192767-74-1 HCAPLUS

CN Piperidinium, 4-amino-2,2,6,6-tetramethyl-1-oxo- (CA INDEX NAME)



CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 74

ST spectra benzothioxanthene chromophore linked hindered amine soln **polymer** matrix; fluorescence quantum yield stable radical **polymer** matrix

IT Flash photolysis

(laser; spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT Fluorescence quenching

(of anthracene by radicals; spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT Chromophores

Emission spectra

Fluorescence

Fluorescent indicators

Triplet state

UV and visible spectra

(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 55684-18-9

RL: CAT (Catalyst use); USES (Uses)

(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 9002-86-2, PVC 9003-07-0, Polypropylene 9003-53-6, Polystyrene

9011-14-7, PMMA
RL: NUU (Other use, unclassified); USES (Uses)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 120-12-7, Anthracene, properties 2226-96-2, TEMPOL 2564-83-2, TEMPO
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 266358-78-5P 881205-96-5P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 52222-05-6P 1120349-57-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 100-42-5, Styrene, reactions 124-22-1, Dodecylamine 14121-49-4 36768-62-4, 4-Amino-2,2,6,6-tetramethylpiperidine ~~192767-74-1~~
RL: RCT (Reactant); RACT (Reactant or reagent)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

IT 16940-66-2
RL: RGT (Reagent); RACT (Reactant or reagent)
(spectral properties of benzothioxanthene chromophore linked with hindered amine in solution and in **polymer** matrixes)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2007:778762 HCAPLUS Full-text
DN 147:323382
TI Towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt. Facile synthetic pathway using nitroxide chemistry
AU Bonilla-Cruz, Jose; Lara-Ceniceros, Tania; Saldivar-Guerra, Enrique; Jimenez-Regalado, Enrique
CS Centro de Investigacion en Quimica Aplicada (CIQA), Coahuila, 25253, Mex.
SO Macromolecular Rapid Communications (2007), 28(13), 1397-1403

CODEN: MRCOE3; ISSN: 1022-1336

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB A TEMPO bromide salt is used to functionalize a silica surface with **nitroxyl** moieties. The functionalization reaction takes place in 48 h under mild conditions. In a second step, grafts of styrene-maleic anhydride **copolymer** are grown from the functionalized silica surface by heating it in the presence of the monomers. FT-IR and TGA anal. show that the silica was first functionalized with nitroxide moieties, and then that grafts of styrene-maleic anhydride grew from the functionalized silica surface. A reaction mechanism is proposed in order to explain the findings. The results suggest that the oxoammonium salts are good candidates for the functionalization and grafting of surfaces that contain hydroxy groups and for the generation of hybrid materials with improved properties.

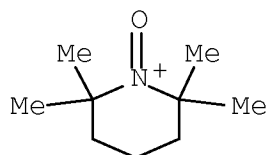
IT 85917-27-7DP, surface reaction product with silica

RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoammonium bromide salt)

RN 85917-27-7 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo-, bromide (CA INDEX NAME)

● Br⁻

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

ST TEMPO functionalized silica surface graft styrene maleic anhydride **copolymer**

IT Composites

Molecular weight

Polydispersity

Polymer chains

Thermal stability

(facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

IT **Polymerization**

(graft, surface; facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

IT **85917-27-7DP**, surface reaction product with silica

RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

IT **7631-86-9DP**, Silica, TEMPO-functionalized

RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

IT **2564-83-2 7726-95-6**, Bromine, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

IT **9011-13-6P**, Maleic anhydride-styrene **copolymer**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(graft on silica surface; facile synthetic pathway using nitroxide chemical towards controlled graft **polymerization** of poly[styrene-co-(maleic anhydride)] on functionalized silica mediated by oxoamminium bromide salt)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1994:324380 HCAPLUS Full-text

DN 120:324380

OREF 120:57097a,57100a

TI Synthesis of Polystyrene Having an Aminoxy Terminal by the Reactions of Living Polystyrene with an Oxoaminium Salt and with the Corresponding Nitroxyl Radical

AU Yoshida, Eri; Ishizone, Takashi; Hirao, Akira; Nakahama, Seiichi; Takata, Toshikazu; Endo, Takeshi

CS Department of Polymer Chemistry, Tokyo Institute of Technology, Tokyo, 152, Japan

SO Macromolecules (1994), 27(12), 3119-24

CODEN: MAMOBX; ISSN: 0024-9297

DT Journal

LA English

AB In order to introduce the C-O-N linkage at the polymer chain end, the reactions of poly(styryllithium) with 1-oxo-4-methoxy-2,2,6,6-tetramethylpiperidinium salt (OAS) and with the corresponding nitroxyl radical (MTEMPO) were investigated in THF at -78 °. The aminoxy terminal group was introduced quant. by the reactions of the living polymer with OAS in the presence of MTEMPO. The reactions proceed via one-electron transfer from the polystyryl anion to OAS, resulting in the polymer radical, which is coupled with MTEMPO, to yield the polystyrene with an aminoxy terminal. Similarly, the electron-transfer reaction proceeded between poly(styryllithium) and MTEMPO to yield the aminoxy-terminated polystyrene quant. The resulting polystyrene could initiate the radical polymns. of Me, Et, and Bu acrylates to give the corresponding block copolymers.

IT 148537-46-6DP, 4-Methoxy-2,2,6,6-tetramethyl-1-oxopiperidinium hexafluoroantimonate, reaction products with polystyrene

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

RACT (Reactant or reagent)

(preparation and block polymerization of, with acrylates)

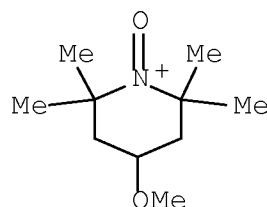
RN 148537-46-6 HCAPLUS

CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-1-oxo-, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 135023-08-4

CMF C10 H20 N O2

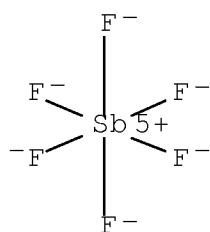


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



CC 35-8 (Chemistry of Synthetic High Polymers)

ST aminoxy terminated polystyrene block **polymn**;
 oxomethoxytetramethylpiperidinium reaction polystyrene;
 methoxytetramethylpiperidinoxyl reaction polystyrene

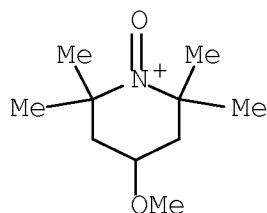
IT 9003-53-6DP, Polystyrene, aminoxy-terminated 95407-69-5DP,
 4-Methoxy-2,2,6,6-tetramethylpiperidin-1-oxyl, reaction products
 with polystyrene **148537-46-6DP**,
 4-Methoxy-2,2,6,6-tetramethyl-1-oxopiperidinium
 hexafluoroantimonate, reaction products with polystyrene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and block **polymerization** of, with acrylates)

IT 110772-34-4P, Butyl acrylate-styrene block **copolymer**
 111740-42-2P, Methyl acrylate-styrene block **copolymer**
 114397-35-2P, Ethyl acrylate-styrene block **copolymer**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, using aminoxy-terminated polystyrene)

OSC.G 55 THERE ARE 55 CAPLUS RECORDS THAT CITE THIS RECORD (55

CITINGS)

L32 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 1993:255497 HCAPLUS Full-text
 DN 118:255497
 OREF 118:44425a,44428a
 TI Oxidation of poly(vinyl alcohol) with an oxoammonium salt
 AU Yoshida, Eri; Yamaguchi, Masao; Takata, Toshikazu; Endo, Takeshi
 CS Res. Lab. Resour. Util., Tokyo Inst. Technol., Yokohama, 227, Japan
 SO Makromolekulare Chemie (1993), 194(5), 1307-14
 CODEN: MACEAK; ISSN: 0025-116X
 DT Journal
 LA English
 AB Oxidation of poly(vinyl alc.) (I) with 1-oxo-4-methoxy-2,2,6,6-tetramethylpiperidinium chloride (II) prepared by a 1-electron oxidation of the corresponding nitroxyl radical was carried out. I with d.p. 300 and degree of saponification (DS) 88 mol% was oxidized with II in the presence of Mg(ClO₄)₂ in N-methyl-2-pyrrolidone to obtain a **polymer** containing 66 mol% ketone units. The oxidation was dependent on solvent and inorg. additive and DS of I but independent of d.p. In the case of I with extremely low (10 mol%) or high (98.5 mol%) DS, no or little oxidation took place. The highest ketone content was obtained in a **polymer** with DS 88 mol%. The ketone content could be controlled by the amount of II.
 IT 95407-70-8
 RL: USES (Uses)
 (oxidizing agents, for saponified poly(vinyl acetate))
 RN 95407-70-8 HCAPLUS
 CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-, 1-oxide chloride (1:1)
 (CA INDEX NAME)



● Cl⁻

CC 35-8 (Chemistry of Synthetic High Polymers)

IT 95407-70-8

RL: USES (Uses)

(oxidizing agents, for saponified poly(vinyl acetate))

L32 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:651935 HCAPLUS Full-text

DN 117:251935

OREF 117:43639a,43642a

TI Oxidation of **polymeric** terminal diols with iron(III) or copper(II) salts mediated by the **nitroxyl** radical

AU Yoshida, Eri; Takata, Toshikazu; Endo, Takeshi

CS Res. Lab. Resour. Util., Tokyo Inst. Technol., Yokohama, 227, Japan

SO Macromolecules (1992), 25(26), 7282-5

CODEN: MAMOBX; ISSN: 0024-9297

DT Journal

LA English

AB 4-Substituted-2,2,6,6-tetramethylpiperidine-1-oxyl (I) is a stable radical mediating a reversible redox reaction between oxoammonium salt and hydroxylamine. The oxidation of **polymeric** terminal diols with Fe(III) or Cu(II) salts mediated by I is carried out to obtain the corresponding **polymers** containing carbonyl moieties. When 4 equiv of Cu(NO₃)₂, 1 equiv of Cu(OH)₂ acid-trapping agent, and 0.2 equiv of I (4-methoxy derivative) are used, a hydrogenated polybutadiene terminal diol is efficiently and selectively oxidized to the corresponding **polymer** with aldehyde or ketone groups in both termini without any intermol. reaction. Furthermore, I supported on crosslinked polystyrene beads catalyzed efficiently the oxidation of hydrogenated polybutadiene diol.

IT 144375-62-2P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of and oxidation of hydrogenated polybutadiene diol

with)

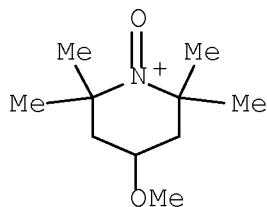
RN 144375-62-2 HCAPLUS

CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-1-oxo-, nitrate (9CI)
(CA INDEX NAME)

CM 1

CRN 135023-08-4

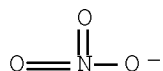
CMF C10 H20 N O2



CM 2

CRN 14797-55-8

CMF N 03



- CC 35-8 (Chemistry of Synthetic High Polymers)
- ST oxidn polydiol **nitroxyl** radical catalyst; polybutadiene
hydrogenated diol oxidn **nitroxyl**; iron **nitroxyl**
catalyst oxidn polydiol; copper nitroxy catalyst oxidn polydiol
- IT Oxidation catalysts
(**nitroxyl** radical and iron or copper, for
polymeric terminal diols)
- IT Oxidation
(of **polymeric** terminal diols, in presence of
nitroxyl radical and iron or copper)
- IT Polyesters, reactions
Polyoxyalkylenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of, in presence of **nitroxyl** radical and iron or
copper)
- IT Rubber, butadiene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroxy-terminated, oxidation of, in presence of **nitroxyl**
radical and iron or copper)
- IT 20427-59-2, Copper hydroxide (Cu(OH)₂)
RL: USES (Uses)
(acid-trapping agents, for **nitroxyl** radical-catalyzed
oxidation of **polymeric** terminal diols)
- IT 95407-69-5

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, containing iron or copper salts, for oxidation of
polymeric terminal diols)

IT 3251-23-8 7447-39-4, Copper chloride (CuCl₂), uses 7705-08-0,
 Iron trichloride, uses 10028-22-5 10421-48-4 11129-27-4,
 Copper bromide 13746-66-2 13770-18-8

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, containing **nitroxyl** radical catalysts, for
 oxidation of **polymeric** terminal diols)

IT 2226-96-2, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, crosslinked polystyrene bead-supported, for oxidation
 of
polymeric terminal diols)

IT 9003-17-2D, Polybutadiene, hydrogenated, diol 24936-97-8, Adipic
 acid-1,4-butanediol **copolymer**, sru 24979-97-3
 25103-87-1, Adipic acid-1,4-butanediol **copolymer**
 25190-06-1, THF **polymer**, sru

RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidation of, in presence of **nitroxyl** radical and iron or
 copper)

IT **144375-62-2P**

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of and oxidation of hydrogenated polybutadiene diol
 with)

IT 9003-17-2

RL: USES (Uses)
 (rubber, hydroxy-terminated, oxidation of, in presence of
nitroxyl radical and iron or copper)

IT 29464-22-0, (p-Chloromethyl)styrene-styrene **copolymer**

RL: USES (Uses)
 (supports, for hydroxytetramethylpiperidineoxyl catalysts, for
 oxidation of **polymeric** terminal diols)

OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7
 CITINGS)

L32 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1992:236311 HCAPLUS Full-text

DN 116:236311

OREF 116:40061a,40064a

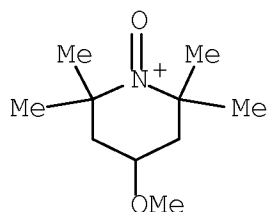
TI Efficient and selective oxidation of a **polymeric** terminal
 diol with copper(II) mediated by **nitroxyl** radical

AU Yoshida, Eri; Takata, Toshikazu; Endo, Takeshi

CS Res. Lab. Resourc. Util., Tokyo Inst. Technol., Yokohama, 227, Japan

SO Journal of Polymer Science, Part A: Polymer Chemistry (1992),
 30(6), 1193-7
 CODEN: JPACEC; ISSN: 0887-624X

DT Journal
 LA English
 AB 4-Methoxy-2,2,6,6-tetramethylpiperidin-1-oxyl and 1-oxo-4-methoxy-2,2,6,6-tetramethylpiperidinium chloride were effective catalysts for the oxidation of hydroxy groups of hydroxy-terminated hydrogenated polybutadiene with $\text{Cu}(\text{ClO}_4)_2$, CuCl_2 , CuBr_2 , or $\text{Cu}(\text{NO}_3)_2$. The catalysts were not effective with $\text{Cu}(\text{OH})_2$, CuSO_4 , or $\text{Cu}(\text{OAc})_2$.
 IT 95407-70-8
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oxidation of hydroxy-terminated hydrogenated polybutadiene with copper salt)
 RN 95407-70-8 HCAPLUS
 CN Piperidinium, 4-methoxy-2,2,6,6-tetramethyl-, 1-oxide chloride (1:1)
 (CA INDEX NAME)



● Cl^-

CC 35-8 (Chemistry of Synthetic High Polymers)
 IT 95407-69-5 95407-70-8
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oxidation of hydroxy-terminated hydrogenated polybutadiene with copper salt)
 L32 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN
 AN 1988:120887 HCAPLUS Full-text
 DN 108:120887
 OREF 108:19675a,19678a
 TI Electrochemical oxidation of carbinols mediated by nitroxyl radicals in solution or bonded to polypyrrolic coatings on platinum and carbon electrodes
 AU Deronzier, Alain; Limosin, Daniele; Moutet, Jean Claude
 CS Lab. Electrochim. Org. Photochim. Redox, Univ. Sci. Technol. Med. Grenoble, Saint Martin d'Heres, 38402, Fr.
 SO Electrochimica Acta (1987), 32(11), 1643-7

CODEN: ELCAAV; ISSN: 0013-4686

DT Journal

LA English

AB Electrochem. oxidation of carbinols mediated by the 2,2,5,5-tetramethyl-3-pyrrolin-1-oxyl, via its nitrosonium ion, were investigated. Studies were carried out with the mediator either in solution or deposited in a film form at the surface of an electrode by **electropolymn.** of a monomer containing pyrrole groups covalently bonded to the **nitroxyl** moiety.

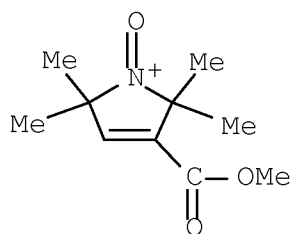
IT 46247-55-6

RL: PRP (Properties)

(electrooxidn. of methoxybenzyl alc. in presence of)

RN 46247-55-6 HCAPLUS

CN 1H-Pyrrolium, 2,5-dihydro-3-(methoxycarbonyl)-2,2,5,5-tetramethyl-1-oxo- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)

Section cross-reference(s): 22, 25

IT Oxidation, electrochemical

(of carbinols, mediated by **nitroxyl** radicals in solution or bonded to polypyrrolic coatings on platinum and carbon electrodes)

IT 46247-55-6 101966-15-8

RL: PRP (Properties)

(electrooxidn. of methoxybenzyl alc. in presence of)

IT 101966-14-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(**polymerization** of, electrochem., on platinum or glassy carbon electrodes, for oxidation of carbinols)

OSC.G 29 THERE ARE 29 CAPLUS RECORDS THAT CITE THIS RECORD (29 CITINGS)

L32 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

AN 1980:163248 HCAPLUS Full-text

DN 92:163248

OREF 92:26453a,26456a

TI Determination of components of g- and A-tensors and rotational mobility of **nitroxyl** radicals by the 2-MM EPR spectroscopic method

AU Grinberg, O. Ya.; Dadali, A. A.; Dubinskii, A. A.; Vasserman, A. M.; Buchachenko, A. L.; Lebedev, Ya. S.

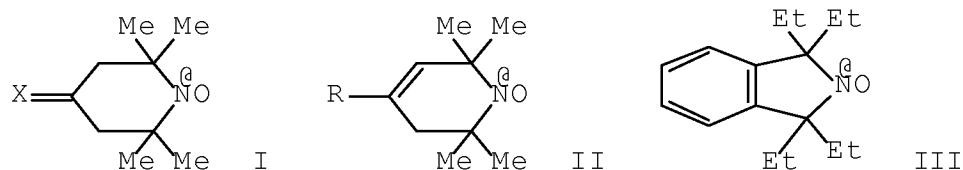
CS Inst. Khim. Fiz., Moscow, USSR

SO Teoreticheskaya i Eksperimental'naya Khimiya (1979), 15(5), 583-8
CODEN: TEKHA4; ISSN: 0497-2627

DT Journal

LA Russian

GI



AB The g- and A-tensor components were determined for I (X = H₂, O), II (R = Ph, PhC.tplbond.C, PhC.tplbond.CC.tplbond.C), and III in natural rubber and toluene matrixes. To determine rotational correlation times in the 4 + 10⁻¹² to 6 + 10⁻¹¹ s range the mm ESR region must be used. For 6 + 10⁻¹¹ to 3 + 10⁻¹⁰ s times both the 2 mm and 3 cm regions are convenient; for times >3 + 10⁻¹⁰ s the 3 cm region is more convenient. The use of correlation times in spin probe studies of mol. dynamics in nonviscous liqs. and dilute **polymer** solns. may be possible.

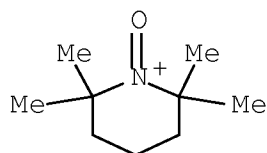
IT 45842-10-2

RL: PRP (Properties)

(ESR tensor components of)

RN 45842-10-2 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1-oxo- (CA INDEX NAME)



CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 68
ST **nitroxyl** ESR tensor rotation; rotation **nitroxyl**
correlation time
IT Spin, electronic
(correlation of, in **nitroxyl** radicals)
IT Molecular rotation
(of **nitroxyl** radical, ESR in relation to)
IT Electron spin resonance
(of **nitroxyl** radicals, tensor components in)
IT 22104-03-6 45842-10-2 69116-03-6 69116-04-7
69116-09-2
RL: PRP (Properties)
(ESR tensor components of)
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1
CITINGS)

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